

CLAIMS

1. A freewheel hub device, comprising
 - 5 a mounting part (1);
 - a first locking ring means (10), which is supported by and non-turnably connected to the mounting part and has a centre bore and axial inner grooves (13), whose one side wall forms a first wedge surface (13a) which has a distance, decreasing in one circumferential direction (A) of the first locking ring means, to the axis of the centre bore;
 - 10 a lock body holder (14), which is mounted, in a limited turnable manner, in the centre bore of the first locking ring means (10) and supports at least two lock bodies (15) which project radially a distance from the lock body holder and each extend in a separate groove (13) of the first locking ring means (10) and which are movable radially inwards against spring action directed 15 essentially radially outwards; and
 - 15 a hub (45), which is rotationally mounted in the lock body holder (14) coaxially therewith and has a circular-cylindrical circumferential surface (47) for cooperation with the lock bodies (15),
 - 20 each lock body (15), after turning of the lock body holder (14) in said one direction (A) to a first turning position, abutting against the associated first wedge surface (13a), which against said spring action forces the lock body radially inwards in the lock body holder 25 into engagement with the circumferential surface (47) of the hub (45), whereby the hub is prevented from rotating in said one direction (A),
 - 25 characterised in that the other side wall of the axial grooves (13) formed 30 in the first locking ring means (10) forms a second wedge surface (13b), which has a distance, decreasing in the 35

other circumferential direction (B) of the first locking ring means, to the axis of the centre bore,

each lock body (15), after turning of the lock body holder (14) in said other direction (B) to a second turning position, abutting against the associated second wedge surface (13b), which against said spring action forces the lock body radially inwards in the lock body holder into engagement with the circumferential surface (47) of the hub (45), whereby the hub is prevented from 10 rotating in said other direction (B),

while each lock body (15), when the lock body holder (14) is in an intermediate turning position between the first and the second turning position, is held, by said spring action, disengaged from the circumferential surface 15 (47) of the hub (45), so that the hub is rotatable in both directions (A and B),

that the device further comprises a second locking ring means (28) which is concentric with the first locking ring means (10) and has a centre bore and axial inner 20 grooves (29), whose one side wall forms a third wedge surface (29a) which has a distance to said axis, which decreases in said one direction (A),

the lock body holder (14) being mounted in a limited turnable manner in the centre bore of the second locking ring means (28) in such a manner that its lock bodies 25 (15) each extend into a separate groove (29) of the second locking ring means,

each lock body (15), when the lock body holder (14) and the second locking ring means (28) are in a first 30 mutual turning position after turning of the second locking ring means in said other direction (B) relative to the lock body holder, abutting against the associated third wedge surface (29a), which against said spring action forces the lock body radially inwards in the lock 35 body holder into engagement with the circumferential surface (47) of the hub (45), whereby the hub is prevented from rotating in said one direction (A).

2. A freewheel hub device as claimed in claim 1, in which a first spring (38) is arranged to bias the lock body holder (14) in said one direction (A) in such a manner that it takes its first turning position, in which 5 each lock body (15) abuts against the associated first wedge surface (13a).

3. A freewheel hub device as claimed in claim 1 or 2, in which the lock body holder (14) and the second locking ring means (28) are biased relative to one 10 another by means of a second spring (43) in such a manner that they take a second mutual turning position, from which the second locking ring means is, against the action of the second spring, turnable in said other direction (B) relative to the lock body holder to said 15 first mutual turning position.

4. A freewheel hub device as claimed in claims 1-3, which has an actuating ring (32), which is concentric with the locking ring means (10, 28) and the lock body holder (14) and is non-turnably connected to the second 20 locking ring means (28) and connected to the lock body holder in a limited turnable manner, wherein,

when the device is in a starting position, in which the lock body holder (14) is held by the first spring (38) in its first turning position and the lock body 25 holder (14) and the second locking means (28) are held by the second spring (43) in their second mutual turning position and the hub (45) thus is rotatable in said other direction (B) but is prevented from rotating in said one direction (A),

30 the lock body holder (14), by turning of the actuating ring (32) in said other direction (B), is turnable to its intermediate turning position, in which the hub (45) is rotatable in both directions (A and B), and by continued turning of the actuating ring (32) in said other 35 direction (B) is turnable to its second turning position, in which the hub (45) is rotatable in said one direction (A) but is prevented from rotating in said other direc-

tion (B) and in which the lock body holder (14) by the abutment of the lock bodies (15) against the associated second wedge surfaces (13b) is prevented from being turned further in said other direction (B), the second locking ring means (28), in further continued turning of the actuating ring (32) in said other direction (B), being turnable, against the action of the second spring (43), in said other direction (B) relative to the lock body holder (14) to said first mutual turning position, in which the hub (45) is also prevented from rotating in said one direction (A) and thus is completely locked.

5. A freewheel hub device as claimed in claim 4, in which the actuating ring (32) has a radially projecting actuating arm (33) for turning of the actuating ring.

10 6. A freewheel hub device as claimed in claim 5, in which the actuating arm (33) is connected to a wire (56).

15 7. A freewheel hub device as claimed in any one of the preceding claims, in which the lock bodies (15) consist of rolls whose axes are parallel with said axis.

20 8. A freewheel hub device as claimed in any one of the preceding claims, in which the mounting part (1) is adapted to be mounted on a wheelchair frame (61) and the hub (45) has means (52) for non-turnable connection of
25 the hub and a wheelchair wheel (62).